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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/446,005	12/14/1999	ESTILL THONE HALL, JR.	RCA88702	1670

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EXAMINER

AN, SHAWN S

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 04/07/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/446,005

Applicant(s)  
Hall, Jr. et al.

Examiner  
Shawn An

Art Unit  
2613



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jan 30, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13, 21, and 22 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13, 21, and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Response to Amendment*

1. As per Applicant's instructions in Paper 6 as filed on 1/30/03, claims 1-4, 11, 13 have been amended, claims 12 and 14-20 have been canceled, and claims 21-22 have been newly added.

### *Response to Remarks*

2. Applicant's remarks with respect to claims 1-11 and 13 have been considered. However, the arguments are moot in view of the new ground(s) of rejection. Further, as per Applicant's detailed remarks about a difference between the Applicant's invention and the Takano's reference, the Examiner wishes to note that when the claim limitations are taken (interpreted) broadly, Takano's reference supports/teaches or meets the claim limitation.

Furthermore, the Applicant is reminded that the *35 USC § 103* rejections are based on combinations of references. Moreover, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-8, 10-11, 13, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wenyon (5,796,499) in view of Takano (JP 8-292498).

**Regarding claim 1**, Wenyon discloses a projection TV, comprising:

an optical system comprising at least three image projectors (Fig. 3B, 40rgb) for projecting images of different colors;

a projection screen (10) formed by a three dimensional hologram (Fig. 3A, 100) representing a three dimensional diffraction array (30), wherein the screen receives images from the projectors on a first side and displays the images on a second side (20) with controlled light dispersion of all the displayed images; and

a reflector (60) disposed in optical communication with the image projectors and the screen so that one of the projectors has a first optical path in an orthogonal orientation (Fig. 2C, 0 degree) with the screen (100), and at least two of the projectors have optical paths converging toward the first optical path in a non orthogonal orientation (+ or - 10 degree) defining angle of incidence.

Further, the Examiner takes official notice that conventional projection screen tends to induce chromatic aberrations in the images projected on the screen (see background on Vriens et al 4,804,884).

Wenyon fails to disclose the reflector being a holographic reflector.

However, Takano teaches a conventionally well known holographic reflector (Fig. 1, 1) for reflecting the incident light in the direction of non-regular reflection. In other words, it becomes possible to apply the light almost perpendicular to the screen (page 5, lines paragraph 0009), which is substantially the same concept as Applicant's providing correction of chromatic aberrations by pre-aligning (reflecting) the image so as to enter screen at preselected angles so as to cause all of the image to be substantially parallel to each other by forming chromatic image (Applicant's: page 16, lines 17-21).

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Therefore, it would have been considered quite obvious to a person of ordinary skill in the relevant art employing a projection TV as taught by Wenyon to modify the reflector to be holographic such as Takano's holographic reflector for correcting optical defects such as chromatic aberrations induced by the projection screen, and also to reduce the depth of the projection TV, thereby providing smaller or compact sized projection TVs.

**Regarding claim 2**, Wenyon discloses lens adapted to focus or correct the respective images (col. 9, lines 18-20).

**Regarding claims 3 and 13**, The Examiner takes official notice that it is well known in the art for a typical optical lens to comprise a polymer material. Additionally, it is well known in the art (old art) for a conventional CRT tubes to not include a CRT optical lens such that exit pupils are substantially incapable of magnifying, focus, and correcting the chromatic aberrations (see Albright 2,672,502).

**Regarding claims 5-8**, since Takano discloses holographic reflector, it would have been obvious to modify the reflector so as to possess well known optical properties of concave mirror, parabolic/spherical lens, and/or panchromatic.

**Regarding claims 4 and 22**, Takano discloses holographic reflector for correcting optical defects such as chromatic aberrations as discussed above. Furthermore, Examiner takes official notice that it is well known in the art (old art) for a conventional CRT tubes to not include a CRT optical lens (less expensive) such that exit pupils are substantially incapable of magnifying, focus, and correcting the chromatic aberrations (see Albright 2,672,502).

**Regarding claim 10**, Wenyon discloses a wide range of Horizontal, Vertical viewing angles, gain, and color shift (Brief Summary; Figs. 5A-6B).

Therefore, it is considered nothing more than simple design choices such that:

Horizontal viewing angle: 38 +/- 3 degree;

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Vertical viewing angle:  $10 \pm 1$  degree;

Screen gain:  $\geq 8$ ; and

Color Shift:  $\leq 3$  to meet certain performance (also refer to Watanabe (5,889,613)).

**Regarding claim 11**, Takano discloses the holographic reflector having preselected wavelength dependent light reflecting characteristics for preconditioning the image so as to compensate for the chromatic aberrations (page 5, lines paragraph 0009).

**Regarding claim 21**, the Examiner takes official notice that a typical optical lens has a preselected wavelength dependent light reflecting characteristics suitable for preconditioning image for focusing the image.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wenyon and Takano as applied to claims 1 and 11 above, respectively, and further in view of Watanabe (5,889,613).

**Regarding claim 9**, the combination of Wenyon and Takano fails to disclose the screen having a color shift  $\leq \sim 2$  for all the angles of incidence in a first subrange of angle of incidence greater than 0 degree and less than equal to  $\sim 10$  degree; and the color shift of the screen is less than or equal to  $\sim 5$  for all the angle of incidence in a second subrange of angles of incidence greater than  $\sim 10$  degree and less than or equal to  $\sim 30$  degree.

However, Watanabe teaches a graph (Fig. 10) having a color shift  $\leq \sim 2$  for all the angles of incidence in a first subrange of angle of incidence greater than 0 degree and less than equal to  $\sim 10$  degree; and the color shift of the screen is less than or equal to  $\sim 5$  for all the angle of incidence in a second subrange of angles of incidence greater than  $\sim 10$  degree and less than or equal to  $\sim 30$  degree.

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Therefore, it would have been considered quite obvious to a person of ordinary skill in the relevant art employing a projection TV as taught by Wenyon to design the screen having a range of desired color shift as taught by Watanabe such that the color shift  $\leq \sim 2$  for all the angles of incidence in a first subrange of angle of incidence greater than 0 degree and less than equal to  $\sim 10$  degree, and the color shift of the screen is less than or equal to  $\sim 5$  for all the angle of incidence in a second subrange of angles of incidence greater than  $\sim 10$  degree and less than or equal to  $\sim 30$  degree to improve the white uniformity of the colors over whole screen, and also to achieve a wider range of viewing area.

### *Conclusion*

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


7. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

A) Vriens et al (4,804,884), Display tube having improved brightness distribution.

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B) Zeinali (5,868,480), Image projection apparatus for producing an image supplied by parallel transmitted colored light.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn An whose telephone number (703) 305-0099 and schedule are Tuesday-Friday.

  
CHRIS KELLEY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

  
SSA

April 3, 2003